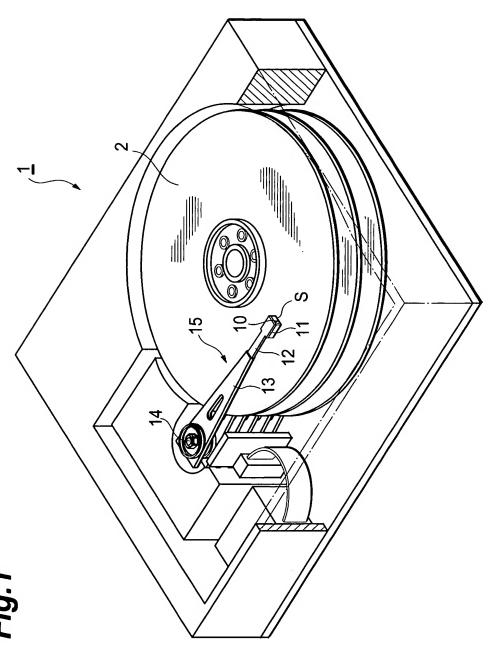
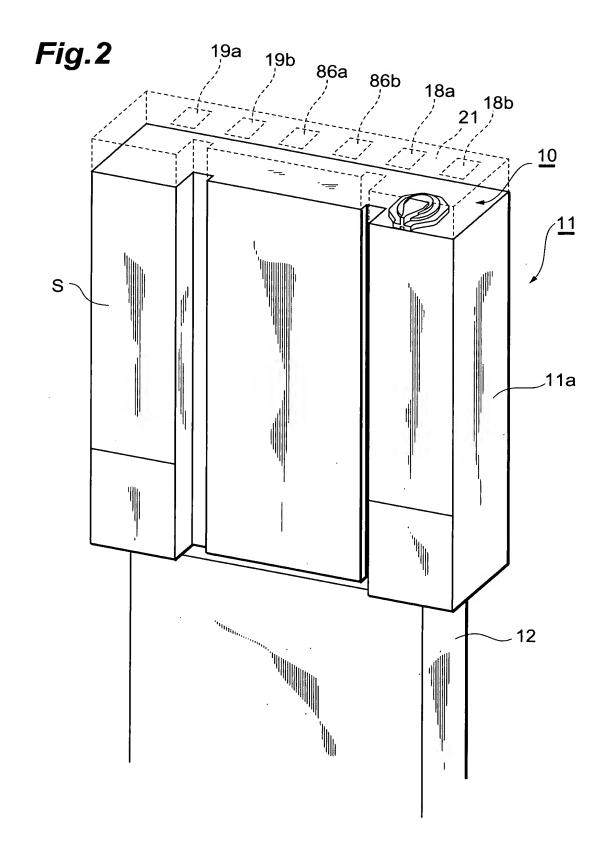
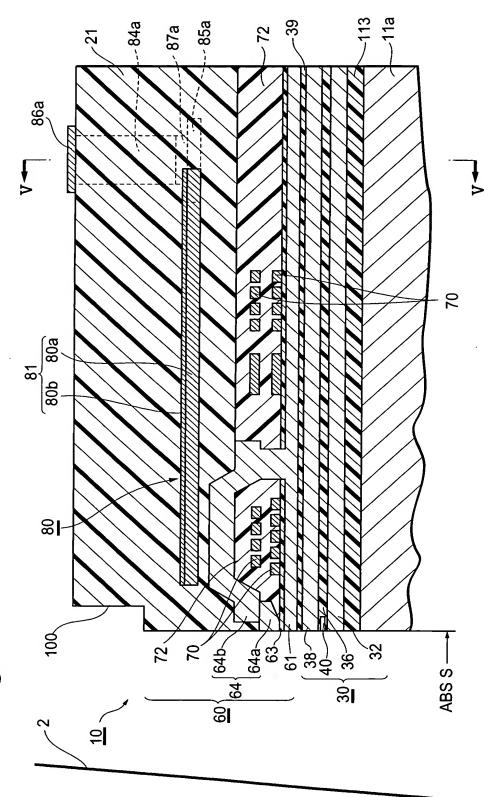
1/17

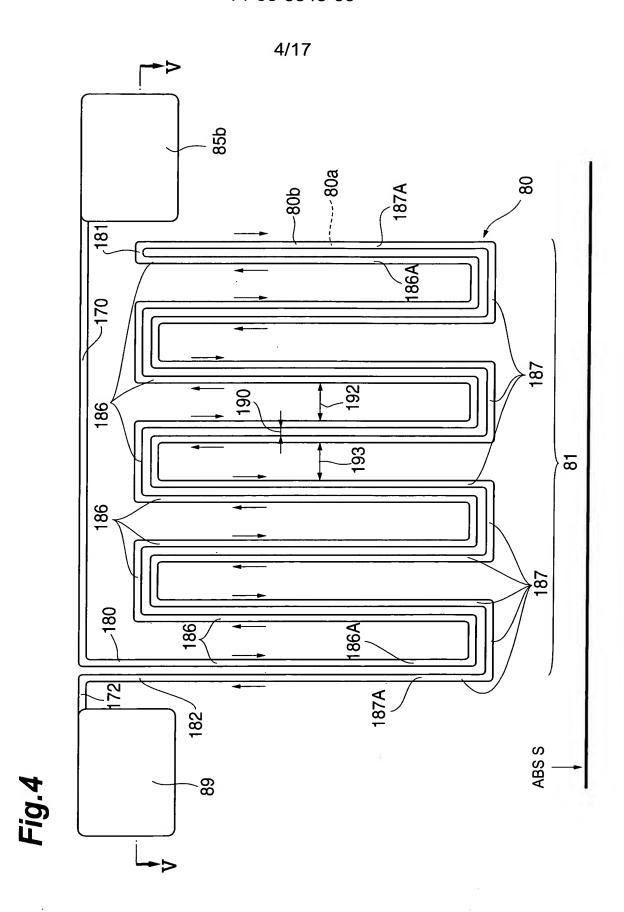


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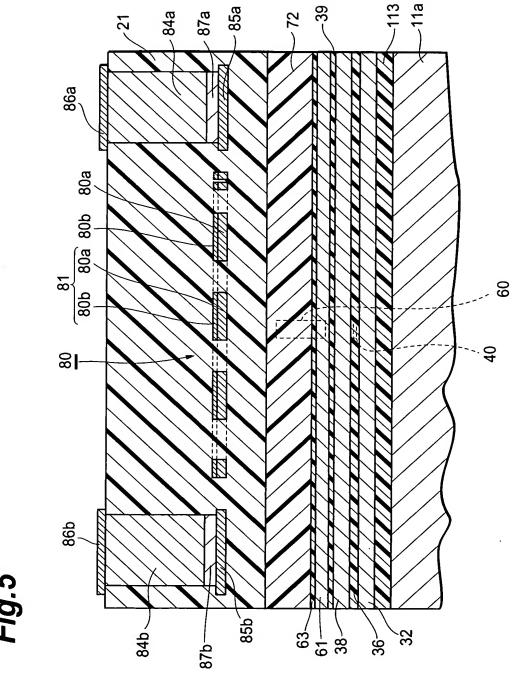


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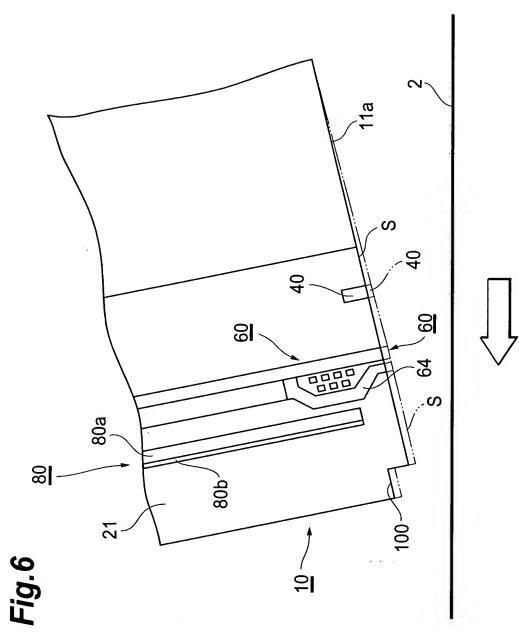


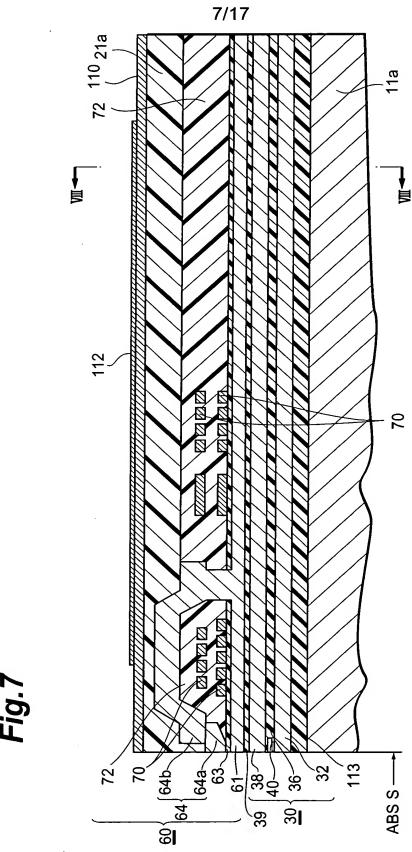


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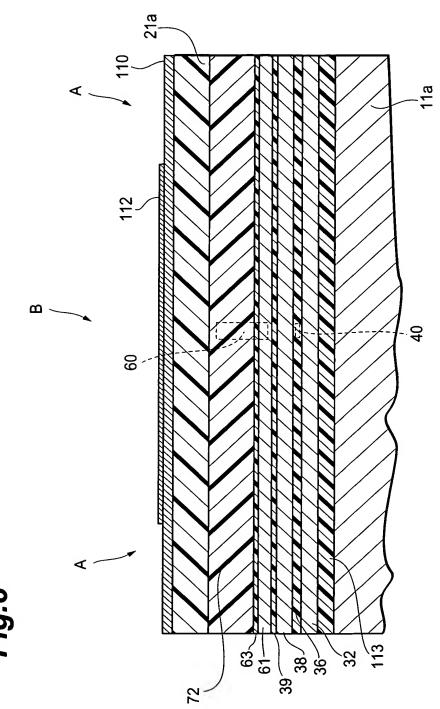


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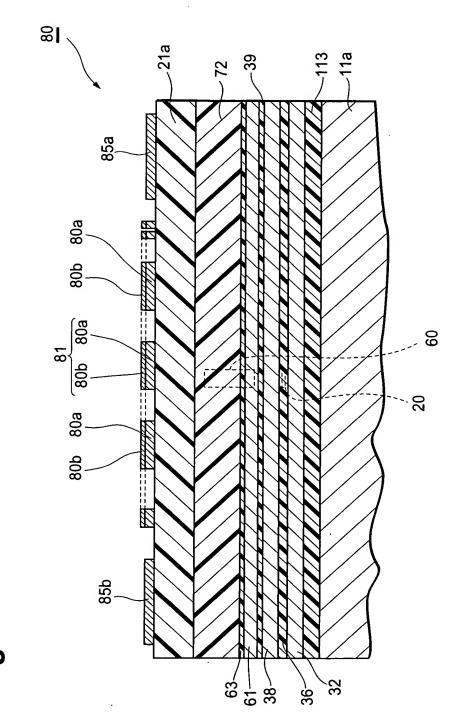


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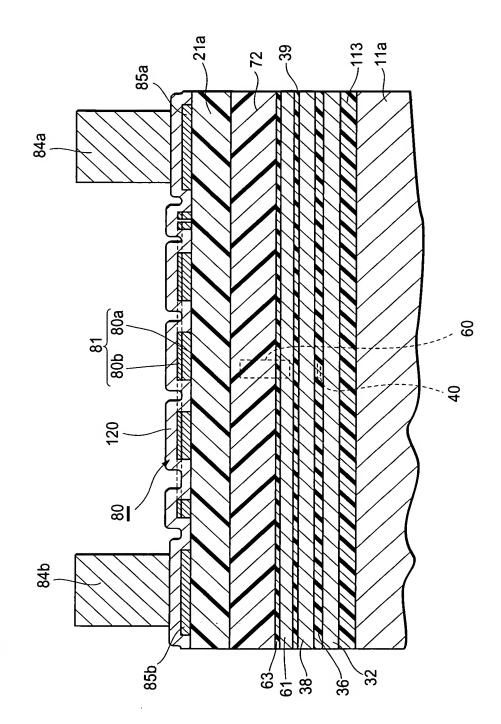


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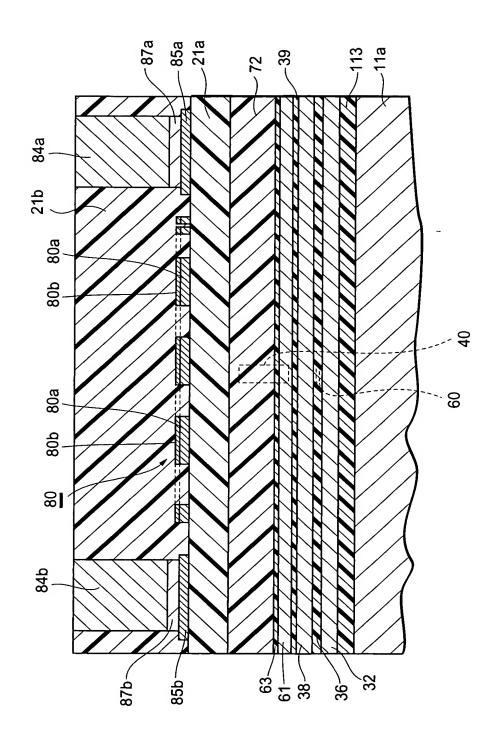
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MA OF	MATERIAL OF FIRST	RESISTIVITY MATERIAL OF MATERIAL OF FIRST OF FIRST	MATERIAL OF SECOND	RESISTIVITY OF MATERIAL OF SECOND		THICKNESS THICKNESS OF FIRST OF SECOND	THICKNESS SHEET SHEET OF SECOND RESISTANCE NAPIATION	SHEET RESISTANCE OF HEATER	SHEET RESISTANCE
LAYER L	η (μ)	LAYER (μΩ·cm)	LAYER	LAYER (μΩ·cm)	MATERIAL OF FIRST LAYER (—)	(mn)	(mu)	(Q)	(%)
NiFo		23				150		1.533	10
		45				140	1	1.643	7./
NiFo		23	NiFeNb	AE.	0.0	150	20	1.436	000
מוו		2 3	(Nb5wt%)	†	7.0	2	10	1.483	5.0
NiEo		23	NiFeNb	7.0	0.6	150	20	1.469	4.0
ואוו		۲٥	(Nb10wt%)	0.7	0.0	0001	10	1.500	- 7
NiFe		23	NiFeNb	UO	0 &	150	20	1.485	4
		20	(Nb14wt%)	90	6.0	000	10	1.509	0.
NiFe		23	NiFeNb	120	6 7	150	20	1.495	2
		4٥	(Nb20wt%)	150	7.6	000	10	1.514	<u>.</u>
NiFo		23	ï	180	2 8	150	20	1.508	0
) 		7	-	001	0.7	001	10	1.520	0.0
Nin ori		23	Тэ	180	8 2	150	20	1.508	0
מ		۲٦	<u>0</u>	20	0.	2	10	1.520	0.0

		1	3/	17										
SHEET RESISTANCE VARIATION (%)	0.0	3.6	c	o0	3 0	6.7	c	7.0	1.7	·-	0 0	0.0	4.0	7:1
SHEET SHEET RESISTANCE OF HEATER VARIATION (\Omega) (\Omega)	0.250	0.273	0.231	0.240	0.238	0.244	0.240	0.2449	0.242	0.246	0.245	0.247	0.244	0.247
THICKNESS THICKNESS OF FIRST OF SECOND LAYER LAYER (nm) (nm)			20	10	20	10	20	10	20	10	20	10	20	10
THICKNESS OF FIRST LAYER (nm)	120	110	120	071	120	120	120	071	120	071	120	120	120	071
RATIO OF RESISTIVITY OF MATERIAL OF SECOND LAYER TO RESISTIVITY OF MATERIAL OF FIRST LAYER (—)	l		3 6	6.7	2.5	0.0	0.1	t	6.0	0.0	7.7	1.1	6.7	·. o
RESISTIVITY OF MATERIAL OF SECOND LAYER (µ Ω·cm)	ı		3 2	C.,	3 U F	0.01	4.2	71	15	2	86	62	UC	77
MATERIAL OF SECOND LAYER	-		AuCu	(Cu5at%)	AuNi	(Ni5at%)	AuNi	(Ni7at%)	AuNi (Ni10at%)		NiFe	ואון כו	COE	D .
RESISTIVITY OF MATERIAL OF FIRST LAYER (μΩ·cm)	٤	0	8	0	٤	O !	٤	0	~	0	٤	0	٣	ז
MATERIAL OF FIRST LAYER	Ü	5	-	D	ت	D)		D		5	11.	B)	č	5
	COMPARATIVE	EXAMPLE2	EXAMPI E7	-/2 """/	EXAMPI ES		EXAMPI EQ		EXAMPI E10	ביסיווו בביוס	EYAMDI E11	בארווון דבוו	EXAMPI E12	

		14	4/	17										
SHEET RESISTANCE VARIATION (%)	8.9		7 12	t.:	2.5	6.3	0,7	o. -	7 7	<u>†</u>	0	7.0	C	7.0
SHEET SHEET RESISTANCE RESISTANCE OF HEATER VARIATION (\Omega) (\Omega)	0.292	0.318	0.266	0.278	0.276	0.283	0.281	0.286	0.283	0.287	0.2907	0.2912	0.2907	0.2912
HICKNESS THICKNESS OF FIRST OF SECOND LAYER LAYER (nm) (nm)	ı		20	10	20	10	20	10	20	10	20	10	20	10
THICKNESS OF FIRST LAYER (nm)	120	110	120	071	120	120	120	120	120	071	120	150	120	071
RATIO OF RESISTIVITY OF MATERIAL OF SECOND LAYER TO RESISTIVITY OF MATERIAL OF FIRST LAYER (—)	; ;		2.4	2 .1	2.0	6.3	7.0	4.0	5.7	0.1	51.0	0.10	710	0.
RESISTIVITY OF MATERIAL OF SECOND LAYER (μΩ·cm)			7.5	۲.ک	10	10	77	+-	20	70	180	100	180	20
MATERIAL OF SECOND LAYER	1		AnCu	(Cu5at%)	AuCu	(Ni10at%)	AuCu	(Ni20at%)	AuNi	(Ni15at%)	:1		Ta	<u> </u>
MATERIAL OF MATERIAL OF FIRST OF FIRST LAYER LAYER (μΩ·cm)	3.5		ሪ	0.0	3.5	0.0	3.5	0.0	2.5	0.0	3.5	9.9	3 6	J.,
MATERIAL OF FIRST LAYER	Au		Δ		Δ	D	Διι		۷	20	۸۱۱	20		<u></u>
	COMPARATIVE	CAMINITES	EXAMPI E13		EXAMPI F14		EXAMP! E15	בייטייוו בבייט	EXAMPI E16	-/	EXAMPI E17		EYAMDI E18	בייווייראיין

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SHEET RESISTANCE VARIATION (%)	7.4	 		3.2		4.7	7 1		7	<u>.</u>	90	0.0	90	0.0
THICKNESS SHEET SHEET OF SECOND RESISTANCE LAYER OF HEATER VARIATION (nm) (Ω) (%)	1.067	1.143	1.000	1.032	1.018	1.042	1.035	1.051	1.039	1.053	1.054	1.060	1.054	1.060
THICKNESS THICKNESS OF FIRST OF SECOND LAYER LAYER (nm) (nm)		l	20	10	20	10	20	10	20	10	20	10	20	10
THICKNESS OF FIRST LAYER (nm)	150	140	150	001	150	001	150	<u> </u>	150	<u> </u>	150	001	150	000
RATIO OF RESISTIVITY OF MATERIAL OF SECOND LAYER TO RESISTIVITY OF MATERIAL OF FIRST LAYER (—)		l	0.0	7.0	0 0	7.0	8.5	0.0	6.0	0.0	11.2	C.1.	113	
RESISTIVITY OF MATERIAL OF SECOND LAYER (µ Ω·cm)			33	32	JE	40	80	0	Uð	00	180	100	180	20
MATERIAL OF SECOND LAYER			NiFeNb	(Nb2wt%)	NiFeNb	(Nb5wt%)	NiFeNb	(Nb7wt%)	NiFeNb	(Nb12wt%)	F		L	<u>u</u>
RESISTIVITY OF MATERIAL OF FIRST LAYER (μΩ·cm)	46	01	16	10	16	0	16	01	16	10	16	0	16	0
MATERIAL OF FIRST LAYER	ON	OIM	O/V	OINI	OW		ON.	OIM	ON		ON		Q	
	COMPARATIVE	EXAMPLE4	EYAMDI E10		EYAMPI 620		EXAMPI E21		EYAMPI E22		EYAMDI E23		EYAMDI E24	

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SHEET RESISTANCE VARIATION (%)	7.1	3.6	2.5	1.7	1.2	9.0	9.0
THICKNESSSHEETSHEETOF SECOND RESISTANCE LAYEROF HEATER (Ω)VARIATION (%)	1.167	1.087	1.109	1.129	1.139 1.153	1.152 1.159	1.152 1.159
THICKNESS THICKNESS OF FIRST OF SECOND LAYER LAYER (nm) (nm)	I	20 10	20	20	20	20 10	20 10
THICKNESS OF FIRST LAYER (nm)	150	150	150	150	150	150	150
RATIO OF RESISTIVITY OF MATERIAL OF SECOND LAYER TO RESISTIVITY OF MATERIAL OF FIRST LAYER (—)	ı	1.8	2.6	4.0	5.4	10.3	10.3
RESISTIVITY OF MATERIAL OF SECOND LAYER (μΩ·cm)	1	32	45	70	95	180	180
RESISTIVITY MATERIAL OF MATERIAL OF SECOND OF SECOND LAYER (μΩ·cm)	1	NiFeNb (Nb2wt%)	NiFeNb (Nb5wt%)	NiFeNb (Nb10wt%)	NiFeNb (Nb15wt%)	Ţ	Та
RESISTIVITY OF FIRST OF FIRST LAYER (μ Ω · cm)	17.5	17.5	17.5	17.5	17.5	17.5	17.5
MATERIAL OF FIRST LAYER	Rh	Rh	Rh	Rh	R.	Rh	묎
	COMPARATIVE EXAMPLES	EXAMPLE25	EXAMPLE26	EXAMPLE27	EXAMPLE28	EXAMPLE29	EXAMPLE30

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SHEET SHEET RESISTANCE RESISTANCE OF HEATER VARIATION (\Omega) (\Omega)		φ. 4.		5.5	7.0	7.7		<u>.</u>	7	o <u>.</u>	0	0.	0	0.0
	1.538	1.667	1.440	1.488	1.474	1.505	1.481	1.509	1.490	1.514	1.513	1.525	1.513	1.525
THICKNESS THICKNESS OF FIRST OF SECOND LAYER LAYER (nm) (nm)]	20	10	20	10	20	10	20	10	20	10	20	10
THICKNESS OF FIRST LAYER (nm)	130	120	120	130	120	130	130	130	120	130	130	001	120	130
RATIO OF RESISTIVITY OF MATERAL OF SECOND LAYER TO RESISTIVITY OF MATERIAL OF FIRST LAYER (—)]	7.3	C.7	2.5	0.0	0 /	t.0	α /	4.0	0 0	9.0	0.0	9.0
RESISTIVITY OF MATERIAL OF SECOND LAYER (µ Ω·cm)	i.		15	+0	70	0.7	80	00	96	2	180	200	180	2
RESISTIVITY MATERIAL OF MATERIAL OF SECOND OF SECOND LAYER (µ \(\Omega\) cm)			NiFeNb	(Nb5wt%)	NiFeNb	(Nb10wt%)	NiFeNb	(Nb12wt%)	NiFeNb	(Nb15wt%)	Ë	-	Ļ	3 -
RESISTIVITY OF MATERIAL OF FIRST CAYER (μ Ω·cm)	20	77	20	77	20	24	20	2	20	3	20	2	20	3
MATERIAL OF FIRST LAYER	COFO	5	O.F.	5	J. P.		COFF		C.O.F.o		OFF		COFF	
	COMPARATIVE	EXAMPLE6	EXAMPI E31		EXAMPI E32		EXAMPI F33		FXAMPI E34		EXAMPI E35		EXAMPI F36	